UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,657	11/13/2003	Jiebo Luo	87007DMW	2589

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Pamela R. Crocker
Patent Legal Staff
Eastman Kodak Company
343 State Street
Rochester, NY 14650-2201

EXAMINER
KRASNIC, BERNARD

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/712,657	LUO ET AL.
	Examiner	Art Unit	
	Bernard Krasnic	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>08 May 2007</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-7</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-7</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

    1. ☐ Certified copies of the priority documents have been received.

    2. ☐ Certified copies of the priority documents have been received in Application No. _____.

    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)   Office Action Summary   Part of Paper No./Mail Date 20070625

DETAILED ACTION

Response to Arguments

1.   The amendment filed 5/08/2007 have been entered and made of record.

2.   In response to the amendments filed on 5/08/2007:

The "Objections to the abstract and specification" have been entered and

therefore the Examiner withdraws the objections.

The "Objections to the claims" have been entered and therefore the Examiner

withdraws the objections to the claims.

The "Claim rejections under 35 U.S.C. 101" have been entered and therefore the

Examiner withdraws the rejections under 35 U.S.C. 101.

3.   Applicant's arguments with respect to claims 1-7 have been considered but are

moot in view of the new ground(s) of rejection.

The Applicant alleges, "In this regard, the Tretter et al. publication ..." in page 8,

and states respectively that the art reference Tretter does not disclose all the limitations

of the amended claim 1 because Tretter does not suggest "obtaining two separate

estimates of image class of the digital image prior to producing a final estimate obtained

based on extracted camera metadata tags and not based on image content features,

and another estimate is an image content-based estimate obtained based on image

content features and not based on the extracted camera metadata tags". However the

Examiner disagrees because Tretter does disclose a final image class by a combination

of the two separate classifiers (1) classifier for content based classification and (2)

classifier for meta-data based classification. Tretter discloses these two classification

based analysis procedures as independent classifiers which may operate alone and

when considered in combination, the classifications from the (1) content based

classification alone and the (2) meta-data classification alone are used to make a final

image classification determination.

Tretter discloses that the meta-data classification *alone* is accomplished using

data capturing attributes such as shutter speed, focusing distance, date and time,

flash/no flash (see Tretter, paragraphs [0008] and [0009]). Tretter also discloses that

content-based analysis *alone* is accomplished using content of the subject data such as

color and contrast (see Tretter, paragraphs [0003] and [0009]). Therefore, when Tretter

discloses "a determination of whether to apply a classifier to a specific subject image

can be made by content-based analysis, meta-data analysis, or a combination of the

two", the combination of two implies that the determination is conducted using the two

separate classifier results (1) result from classifying using content-based classification

alone and (2) result from classifying using meta-data classification alone.

4.   Applicant's arguments filed 5/08/2007 have been fully considered but they are

not persuasive.

The Applicant alleges, "A notable feature of Claim 1 is that ..." in page 7, and

states respectively that amended claim 1 teaches two separate estimates are used to

produce a final estimate of image class of the digital image. The Examiner agrees with

the Applicant's interpretation of amended claim 1, but the Examiner still believes that
the art reference Tretter discloses as discussed above that this limitation of using two
separate classification results, (1) classifier for content-based classification and (2)
classifier for meta-data based classification, to determine a final classification of the
image.

The Applicant alleges, "In contrast, the Tretter et al. publication is understood ..."
in pages 7-8, and states respectively that Tretter is different from the teachings of the
Applicants specification. In response to applicant's argument that the references fail to
show certain features of applicant's invention, it is noted that the features upon which
applicant relies (i.e., indoor/outdoor scene classification) are not recited in the rejected
claim(s). Although the claims are interpreted in light of the specification, limitations from
the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26
USPQ2d 1057 (Fed. Cir. 1993).

The Applicant alleges, "In this regard, the Tretter et al. publication ..." in page 8,
and states respectively that the art reference Tretter does not disclose all the limitations
of the amended claim 1 as discussed above. However the Examiner disagrees as
discussed above, therefore the claim rejection on claim 1 is maintained using the Tretter
reference.

The Applicant alleges, "For at least the above discussed reasons ..." in page 9
and "The other claims in this application ..." in page 9, and states respectively that claim
1 is patentable over Tretter and over the rejecting references taken separately or in any
proper combination and therefore the dependent claims are deemed patentable.

However the Examiner disagrees because as discussed above, amended claim 1 is not

deemed patentable and therefore the rejection to claim 1 is maintained. Similarly, the

claim rejections on dependent claims 2-7 are also maintained.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public
> use or on sale in this country, more than one year prior to the date of application for patent in the United
> States.

6.   Claims 1-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by

Tretter et al (US 2002/0140843 A1, used in previous Non-Final Office Action rejection).

Re Claim 1: Tretter discloses a method for scene classification / content-based and

metadata based classification (see abstract, lines 1-3) of a digital image comprising the

steps of (a) extracting one or more pre-determined camera metadata tags / meta data

from the digital image (see abstract, lines 6-10, paragraph [0008], lines 9-12); (b)

obtaining an estimate of image class / meta data based classification based on (1) the

extracted camera metadata tags / meta data (see abstract, lines 1-3, 10-14, paragraph

[0008], lines 15-20) and not (2) image content features (paragraph [0008] shows that

the meta-data classifier only uses data capturing attributes such as shutter speed,

focusing distance, date and time, flash/no flash), thereby providing a metadata-based

estimate / meta-data based classification; (c) obtaining, separately from the metadata-

based estimate (paragraphs [0003]-[0004] and [0009] shows that the content based

classification only uses content of the subject data such as color and contrast) another estimate of image class / content based classification of the digital image based on (1) image content features / content based data (see abstract, lines 1-3, 10-14, paragraph [0008], lines 15-20) and not (2) the extracted camera metadata tags (paragraphs [0003]-[0004] and [0009] show that the content based classification only uses content of the subject data such as color and contrast), thereby providing an image content-based estimate / content based classification; and (d) producing a final estimate of image class / combination of both results of the content based classifier and meta data based classifier of the digital image based on a combination of the metadata-based estimate / meta data based classification and the image content-based estimate / content based classification (see abstract, lines 10-14, paragraph [0008], lines 15-20).

Re Claim 2: Tretter further discloses the metadata extracted in step (a) includes one or more of exposure time, aperture, shutter speed, brightness value, subject distance / focusing distance and flash fired / flash - no flash (see abstract, lines 6-10, paragraph [0008], lines 9-12).

Re Claim 3: Tretter further discloses the image content features in step (c) include one or more of color, texture and semantic features (see paragraph [0003], lines 7-8, paragraph [0008], lines 1-3, paragraph [0025], lines 6-11).

As to claim 5, the claim is the corresponding computer readable medium for storing a program claim to claim 1 respectively. The discussions are addressed with regard to claim 1.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tretter in view of Vivarelli ("Using Bayesian neural networks to classify segmented images" - IEEE - July 1997, pages 268-273, used in previous Non-Final Office Action rejection). The teachings of Tretter have been discussed above.

However, Tretter fails to disclose or fairly suggest that the combination in step (d) is obtained by using a Bayesian network

Vivarelli discloses the combination in step (d) is obtained by using a Bayesian network (see page 269, section BAYESIAN TRAINING OF NEURAL NETWORKS, paragraphs 1-2, Vivarellis Bayesian neural network can replace Treters nodal or neural network analysis for a final classification of a digital image).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tretter's method using Vivarelli's teachings of making a final classification using a combination of both content based and meta data

based classification through nodal analysis (see Treter, paragraph [0009], lines 1-11,

paragraph [0010], lines 1-5) by replacing it with a Bayesian network in order to further

improve the accuracy of the classification by applying the appropriate contribution

weights to the two classifiers (content based and meta data based classification).

9.   Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tretter in

view of Schroder et al (US 7,020,330 B2, used in previous Non-Final Office Action

rejection). The teachings of Tretter have been discussed above.

However, Tretter fails to disclose or fairly suggest applying a customized image

enhancement procedure to the digital image in response to the final estimate of image

class of the digital image.

Schroder discloses applying a customized image enhancement procedure / color

correction process for assigned image class (3) to the digital image in response to the

final estimate of image class (2) of the digital image (see Fig. 1, abstract, lines 8-11).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify Tretter's method by using Schroder's teachings

by including the application of applying a customized image enhancement procedure

after image classification in order to apply the color correction process which is most

likely for a particular image belonging to a particular selected image class (see

Schroder, col. 3, lines 10-12).

10.   Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tretter as

modified by Schroder, and further in view of Cooper ("A novel approach to color cast

detection and removal in digital images" - SPIE - Jan 2000, vol 3963, pages 167-177,

used in previous Non-Final Office Action rejection). The teachings of Tretter as

modified by Schroder have been discussed above.

However, Tretter as modified by Schroder fails to disclose or fairly suggest the

customized image enhancement procedure is color balancing and the customized

image enhancement procedure includes retaining or boosting brilliant colors in images

classified as sunset scenes and removing warm-colored cast from indoor images

classified as tungsten-illuminated scenes.

Cooper discloses the customized image enhancement procedure is color

balancing / color cast due to illuminant sources removal and the customized image

enhancement procedure includes retaining or boosting brilliant colors in images

classified as sunset scenes / cast removal from outdoor sunset conditions and removing

warm-colored cast from indoor images / cast removal from indoor natural images

classified as tungsten-illuminated / unusual illuminant scenes (see title, abstract, line 1,

section 7 - RESULTS, paragraph 1, lines 5-6, paragraph 2, lines 1-3).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to further modify Tretter's method, as modified by

Schroder, using Cooper's teachings by including the color correcting color cast removal

feature in order to correct the color cast which is encountered in indoor and outdoor

images such as sunset images (see Cooper, section 7 - RESULTS, paragraph 1, lines 5-6).

Conclusion

11.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.
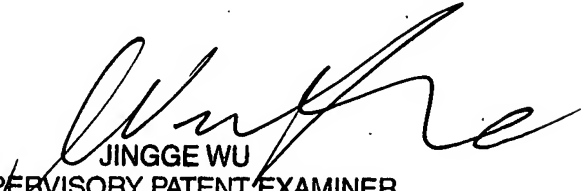
12.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Krasnic whose telephone number is (571) 270-1357. The examiner can normally be reached on Mon-Thur 8:00am-4:00pm and every other Friday 8:00am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bernard Krasnic
June 25, 2007

JINGGE WU
SUPERVISORY PATENT EXAMINER